USCMS Engineer Status Report for December 2003

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1 Work Performed This Month

I joined the POOL project as part of the POOL collection team, with the goal of integrating POOL collections into ARDA, so that they satisfy ARDA requirements. I had a two hour meeting at Argonne with David Malon and two other members of the team to discuss plans. I spent some time studying the current implementation of POOL collections, as well as the ARDA RTAG documentation.

Via VRVS and the recorded videos, I took the three two hour tutorials on ORCA/COBRA that were presented by Stephan and Vincenzo.

(This item mostly in November, but work extended into December) POOL/ROOT could not read files from dCache using URL style addressing, which is necessary when the dCache file system is not locally mounted. The problem was not in POOL, but in ROOT. The ROOT dCache plug-in was not up to date. I updated the ROOT dCache plug-in so that it works for POOL. This fix is in the latest release of ROOT (3.10.02).

With Natalia, I prepared a DAR distribution of current ORCA releases that included the above dCache fix, even though ORCA was built without the fix. This allowed users of the DAR distribution to use dCache. I also provided instructions for those who do not use the DAR distributions to pick up the libraries and system file needed to use dCache with existing releases.

A new copy of the dCache preload library was delivered to me from DESY via Michael Ernst that would allow the preload library to work with URL style addressing. There was a minor omission that prevented it from working.

I modified the code to make it work, and made the new preload library available.

A problem was discovered by an ORCA developer using ROOT TTrees where the TTree branch addresses were mysteriously zeroed at an unexpected time. I found the cause of this problem, and, with help from Philippe Canal, provided a fix to POOL.

I investigated the work necessary in COBRA/POOL to use ROOT TTrees for the persistent data as an alternative to keyed objects. I got the code working so that TTrees could be successfully written, but was not yet able to read them back without error. The motivation is possible performance improvements (run time and disk space).

Finally, I gave one additional CMS tutorial to Marc Paterno and Walter Brown, each of whom is now 50% on CMS. They will be doing performance studies of POOL/ROOT as used by COBRA/ORCA.

2   Plans For Next Month

Begin work on POOL collections/ARDA. Another meeting at Argonne with POOL collection team is already arranged for tomorrow (Jan 8).

Enable COBRA to set ROOT specific parameters through POOL (e.g. Compression level, write options, etc.)

Give POOL tutorial to ORCA/OSCAR developers/users.

Continue (remotely) taking the remaining ORCA/COBRA tutorials to be given at CERN.